

Remarks / Arguments

Applicants thank the Examiner for the thoroughness of examination detailed in the Office Action of November 11, 2006 and respectfully request favorable reconsideration of this application as amended.

Entry of After Final Amendment

Applicants kindly request entry of this After Final Amendment because it does not present new issues requiring further search or consideration. Also, it substantially narrows the issues if they were to be appealed.

Claim Rejections Under 35 U.S.C. § 112:

Claims 29-43, 45-48 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

With respect to the term "and/or", Applicants have amended this term to simply "or". As such, they believe that one of ordinary skill in the art would readily understand the metes and bounds of the claims.

With respect to the alternative expressions in claims 43 and 48, Applicants have amended claim 43 to place it in Markush form as suggested by the Examiner. Claim 48 has been canceled.

With respect to the lack of antecedent basis in claim 44, that claim has been canceled.

Claims 29-43, 45-48 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement.

In view of the greater clarity provided by the Examiner with regard to the disclosure of an iris in the reference U.S. Patent No. 6,789,400 (Lu et al.), Applicants withdraw their argument that Lu et al. is not enabling with respect to manipulation of the iris. Applicants were under the mistaken belief that the

Examiner had taken the position that Lu et al. taught manipulation of the cap assembly 1 when it now is apparent to them that the Examiner had taken the position that Lu et al. taught manipulation of an iris. In light of this new argument from the Examiner, Applicants hereby admit that Lu et al. is enabling as to manipulation of an iris in a heat exchanger.

Applicants respectfully traverse the rejection because the Examiner draws contrary findings of law based upon a substantially same set of facts. On one hand, the Examiner finds that Lu et al. is enabling as to manipulation of an iris, despite the relative absence of language describing how to manipulate the iris. On the other hand, the Examiner finds that Applicants's claims are not enabled as to manipulation of the iris diaphragm despite the presence of the description extending from line 32 of page 13 to line 4 of page 14. Applicants respectfully request the Examiner to find that Applicants's claims are enabled as to manipulation of the iris diaphragms.

Claim Rejections Under 35 U.S.C. § 103:

Claims 29-35 and 37-43, 45-47 and 49 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu et al. Applicants respectfully traverse the rejection because Lu et al. teaches away from the hypothetical combination of various teachings in Lu et al. as suggested by the Examiner. Applicants kindly direct the Examiner's attention to line 49 of column 8 through line 9 of column 9. Applicants respectfully assert that one of ordinary skill would likely consider this portion of Lu et al. at the end of the Detailed Description before the Examples to describe the various pros and cons of conventional heat exchangers versus the Lu et al. This is exemplified by language such as

In many commercial heat exchangers, the coolant is fed from the bottom through a single-chamber feed assembly. An iris plate is usually attached to the bottom of the feed assembly to restrict the egress of the coolant from the feed chamber. The diameter of the opening of the iris plate is quite small (usually between 1 and 5 mm),

the gas velocity at the iris plate can reach 50 meters per second or higher, depending on the feed flow rate, cooling chamber tube diameter and length of the cooling chamber tube, as well as the iris diameter. *The high gas velocity through the iris plate could cause fiber vibration, which would result in fiber breakage and affect the fiber quality.*

Another problem associated with the iris plate design is the percentage of the coolant lost from the bottom increases with the decrease of feed flow and can not be conveniently adjusted for varying flow rates.

Given this language, it would have been apparent to one of ordinary skill in the art that Lu et al. described the iris with respect to conventional heat exchangers not the Lu et al. heat exchanger. Thus, the Examiner's rejection is most properly viewed as a combination of a) the disclosure of various details of the Lu et al. inventive cap assembly, and b) the disclosure of an iris used in conventional heat exchangers. Applicants respectfully assert that, when Lu et al. is considered as a whole, it teaches away from the use of an iris. Evidentiary basis for this position may be found in the highlighted language in italics above. Given Lu et al.'s teaching away from the combination suggested by the Examiner, Applicants argue that one of ordinary skill in the art would not have been motivated to combine the teachings of the conventional iris diaphragm and of the Lu et al. cap assembly.

Claim 36 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu et al., as applied to claim 35 above, and further in view of U.S. Patent No. 4,792,347 (Deneka). Applicants traverse the rejection because Lu et al. teaches away from the hypothetical combination of teachings suggested by the Examiner and Deneka does not provide a motivation to the contrary.

Claims 42-44 and 48 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu et al., as applied to claim 32 above, and further in view of U.S. Patent No. 5,942,020 (Marcelissen) and optionally in view of Deneka and/or Wikipedia.com's "control system" entry. Applicants traverse the rejection because Lu et al. teaches away from the hypothetical combination of teachings

suggested by the Examiner and neither Marcelissen, Deneka, nor Wikipedia.com's "control system" entry provides any motivation to the contrary. Additionally, Applicants assert that the "control system" entry of Wikipedia.com is not 35 USC 102 prior art because the Examiner has not shown that the publication predates the filing date of the instant application.

Should the examiner believe a telephone call would expedite the prosecution of the application, he is invited to call the undersigned attorney at the number listed below. It is not believed that any fee is due at this time. If that belief is incorrect, please debit deposit account number 01-1375. Also, the Commissioner is authorized to credit any overpayment to deposit account number 01-1375.

Respectfully submitted,

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Date: February 8, 2007

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